# Table des matières

1. Systematic Reviews and Meta-Analysis	1
1.1. Generic Acupuncture	1
1.1.1. Vickers 2018 ★★★	1
1.1.2. Luo 2017 ★★	2
1.1.3. Vickers 2012 ★★★	2
1.1.4. Murphy 2010 Ø	3
1.1.5. Schellingerhout 2007 ★	3
1.1.6. Green 2005 Ø	4
1.1.7. Grant 2004 ★	5
1.2. Special Acupuncture Techniques	5
1.2.1. Comparison of Acupuncture Techniques	5
1.2.1.1. Zhang 2020	5
1.2.2. Ashi Points / Dry Needling	6
1.2.2.1. Hall 2018 Ø	6
1.2.2.2. Wang 2016 ★	
1.2.3. Acupotomy	7
1.2.3.1. Huang 2015 ★	7
1.2.4. Warm Needle	8
1.2.4.1. Zhang 2020	8
1.2.5. Combined with loint Mobilization	8
1.2.5.1. Wang 2020	8
1.2.6. Multimodal Care	
1.2.6.1. Goldarub 2016 ★	
1.3. Special Clinical Forms	10
1.3.1. Rotator Cuff Disease	10
1.3.1.1. Zhang 2024	10
1.3.1.2. Choi 2021	11
1.3.1.3. Choi 2018	11
1.3.2. Subacromial Impingement Syndrome	12
1.3.3. Poststroke Shoulder Pain	12
2. Clinical Practice Guidelines	12
2.1. Quebec Rehabilitation Network and the Quebec Pain Research Network (REPAR, QPRN,	
Canada) 2025 ⊕	12
2.2. Finnish Medical Association, Finnish Physiatrist Association and Finnish Orthopedic	
Association (Finland) 2022 🕀	12
2.3. Institut de Recherches Robert-Sauvé en santé et en sécurité du travail (IRSST, Canada)	
(lésions professionnelles de la coiffe des rotateurs de l'épaule) 2021 ⊕	12
2.4. National Institute for Health and Clinical Excellence (NICE, UK) 2017 ⊕	13
2.5. American College of Occupational and Environmental Medicine (ACOEM, USA) 2016	
	13
2.6. Massachusetts Department of Industrial Accidents (DIA, USA) 2015 ⊕	14
2.7. Dutch Orthopaedic Association (DOA, Netherlands) 2014 Ø	14
2.8. Finnish Physical Society and the Finnish Orthopedic Association (Finland) 2014 ⊕	14
2.9. Philippine Academy of Rehabilitation Medicine (PARM, Philippine) 2014	15
2.10. University of New South Wales, Medicine, Rural Clinical School (Australie) 2013 ⊕	15
2.11. American College of Occupational and Environmental Medicine (ACOEM, USA) 2011 $\oplus$	
-	15
2.12. Accident Compensation Corporation (ACC, New-Zealand) 2011 ⊕	15
2.13. National Health and Medical Research Council (Australie) 2003 Ø $\ldots$	16

# **Shoulder Pain**

# épaule douloureuse : évaluation de l'acupuncture

*Articles connexes*: - épaule gelée - conduites thérapeutiques - pathologie - acupuncture expérimentale - qigong -

# **1. Systematic Reviews and Meta-Analysis**

## **1.1. Generic Acupuncture**

#### 1.1.1. Vickers 2018 \*\*\*

Vickers AJ, Vertosick EA, Lewith G et al, Acupuncture Trialists' Collaboration. Acupuncture for Chronic Pain: Update of an Individual Patient Data Meta-Analysis. J Pain. 2018 May;19(5):455-474. [168043]

Purpose	Our objective was to update an individual patient data meta-analysis to determine the effect size of acupuncture for 4 chronic pain conditionss.
Methods	We searched MEDLINE and the Cochrane Central Registry of Controlled Trials randomized trials published up until December 31, 2015. We included randomized trials of acupuncture needling versus either sham acupuncture or no acupuncture control for nonspecific musculoskeletal pain, osteoarthritis, chronic headache, or <b>shoulder pain</b> . Trials were only included if allocation concealment was unambiguously determined to be adequate. Raw data were obtained from study authors and entered into an individual patient data meta-analysis.
Results	The main outcome measures were pain and function. An additional 13 trials were identified, with data received for a total of 20,827 patients from 39 trials. Acupuncture was superior to sham as well as no acupuncture control for each pain condition (all P < .001) with differences between groups close to .5 SDs compared with no acupuncture control and close to .2 SDs compared with sham. We also found clear evidence that the effects of acupuncture persist over time with only a small decrease, approximately 15%, in treatment effect at 1 year. In secondary analyses, we found no obvious association between trial outcome and characteristics of acupuncture treatment, but effect sizes of acupuncture were associated with the type of control group, with smaller effects sizes for sham controlled trials that used a penetrating needle for sham, and for trials that had high intensity of intervention in the control arm. We conclude that acupuncture is effective for the treatment of chronic pain, with treatment effects persisting over time. Although factors in addition to the specific effects of needling at correct acupuncture point locations are important contributors to the treatment effect. Variations in the effect size of acupuncture in different trials are driven predominantly by differences in treatments received by the control group rather than by differences in the characteristics of acupuncture treatment.

Perspective	Acupuncture is effective for the treatment of chronic musculoskeletal, headache, and osteoarthritis pain. Treatment effects of acupuncture persist over time and cannot be
	explained solely in terms of placebo effects. Referral for a course of acupuncture treatment is a reasonable option for a patient with chronic pain.

#### 1.1.2. Luo 2017 **\***\*

Luo Xiao-Zhou, Tang Chun-Zhi, Yang Xue-Jie, Huang Jian-Ting. [A Meta-Analysis of Acupuncture and Moxibustion Therapy for Scapulohumeral Periarthritis]. Journal of Basic Chinese Medicine. 2017; 23(4): 586-. [176623].

Purpose	To evaluate the effectiveness and potential superiority of acupuncturer and moxibustion therapy for scapulohumeral periarthritis.
Methods	To collect the clinical randomized controlled trials about the content what is acupuncture and moxibustion therapy for scapulohumeral periarthritis from various research literature database. Moreover, Jadad scale was used to assess the quality score of these research papers. Then, Revman 5. 3 and STATA 13. 0 softwares were used for Meta- analysis.
Results	A total of 54 papers satisfied all the inclusion criteria, and <b>5865 patients</b> were included. According to meta-analysis shows that the curative effect of Warming Needle treatment group, electroacupuncture treatment group and simple acupuncture treatment group are significantly superior to control groups. Furthermore, the curative effect of acupuncture combined with Tuina Treatment. Group is significantly more effective than block therapy group, western medicine group and simple Tuina treatment group. Totally, Acupuncture and moxibustion therapy is superior to control group.
Conclusion	Acupuncture and moxibustion therapy is an effective measure for scapulohumeral periarthritis. More high quality research trials are needed to further confirm this consequence.

#### 1.1.3. Vickers 2012 \*\*\*

Vickers AJ, Cronin AM, Maschino AC, et al; Acupuncture Trialists'Collaboration. Acupuncture for chronic pain: individual patient data meta-analysis. Arch Intern Med 2012;172:1444-53. [157530].

We aimed to determine the effect size of acupuncture for 4 chronic pain conditions: back and neck pain, osteoarthritis, chronic headache, and shoulder pain.
We conducted a systematic review to identify randomized controlled trials (RCTs) of acupuncture for chronic pain in which allocation concealment was determined unambiguously to be adequate. Individual patient data meta-analyses were conducted using data from 29 of 31 eligible RCTs, with a total of 17 922 patients analyzed. For shoulder pain, <b>four were identified RCTs (564 patients)</b> .
In the primary analysis, including all eligible RCTs, acupuncture was superior to both sham and noacupuncture control for each pain condition (P<0,001 for all comparisons). After exclusion of an outlying set of RCTs that strongly favored acupuncture, the effect sizes were similar across pain conditions. Patients receiving acupuncture had less pain, with <b>score for shoulder pain that were 0,62 (0,46 - 0,77) SDs lower than sham controls</b> ; it was not possible to perform meta-analysis for noacupuncture control.These results were robust to a variety of sensitivity analyses, including those related to publication bias.
Acupuncture is effective for the treatment of chronic pain and is therefore a reasonable referral option. Significant differences between true and sham acupuncture indicate that acupuncture is more than a placebo.

#### 1.1.4. Murphy 2010 Ø

Murphy RJ, Carr AJ. Shoulder pain. BMJ Clin Evid. 2010. pii:1107. [164600]

Introduction	Shoulder pain is a common problem with an estimated prevalence of 4% to 26%. About 1% of adults aged over 45 years consult their GP with a new presentation of shoulder pain every year in the UK. The aetiology of shoulder pain is diverse and includes pathology originating from the neck, glenohumeral joint, acromioclavicular joint, rotator cuff, and other soft tissues around the shoulder girdle. The most common source of shoulder pain is the rotator cuff, accounting for over two-thirds of cases.
Methods And Outcomes	We conducted a systematic review and aimed to answer the following clinical questions: What are the effects of oral drug treatment, topical drug treatment, local injections, non-drug treatment, and surgical treatment? We searched: Medline, Embase, The Cochrane Library, and other important databases up to August 2009 (Clinical Evidence reviews are updated periodically, please check our website for the most up-to-date version of this review). We included harms alerts from relevant organisations such as the US Food and Drug Administration (FDA) and the UK Medicines and Healthcare products Regulatory Agency (MHRA).
Results	We found 71 systematic reviews, RCTs, or observational studies that met our inclusion criteria. We performed a GRADE evaluation of the quality of evidence for interventions.
Conclusions	In this systematic review we present information relating to the effectiveness and safety of the following interventions: <b>acupuncture</b> , arthroscopic subacromial decompression, autologous whole blood injection, corticosteroids (oral, subacromial injection, or intra-articular injection), electrical stimulation, excision of distal clavicle, extracorporeal shock wave therapy, ice, laser treatment, manipulation under anaesthesia, suprascapular nerve block, non-steroidal anti-inflammatory drugs (oral, topical or intra-articular injection), opioid analgesics, paracetamol, physiotherapy (manual treatment, exercises), platelet-rich plasma injection, rotator cuff repair, shoulder arthroplasty, and ultrasound.
Acupuncture	Unknown effectiveness

#### 1.1.5. Schellingerhout 2007 $\star$

Schellingerhout JM, ThomaS S, Verhagen AP. [Aspecific shoulder complaints: literature review to assess the efficacy of current interventions]. Ned Tijdschr Geneeskd. 2007;151(52):2892-7. [148126].

Objective	To assess the efficacy of current interventions for shoulder complaints in adults.
Design	Systematic literature review.
Method:Medline	and the Cochrane Library were searched for systematic reviews and randomised studies on the efficacy of interventions for shoulder complaints in adults. Studies of patients with an identifiable cause of shoulder symptoms or an underlying disease were excluded. Studies evaluating pain, function and duration of symptoms were included.

Conclusion	The available evidence indicates that the efficacy of interventions commonly used in The Netherlands for shoulder complaints is low, and the positive evidence available suggests a clinically irrelevant effect.
Results	Of the III randomised clinical trials found, only a few (19) focused on aspecific shoulder complaints; the remainder involved poorly defined subgroups. II useful studies were identified. There was little or no evidence to support or refute the efficacy of NSAIDs, exercise therapy, manipulative therapy, corticosteroid injection and acupuncture in comparison to placebo for the treatment of shoulder complaints. Moderate evidence was found to support the efficacy of NSAIDs, exercise therapy, corticosteroid injection and <b>acupuncture</b> in head-to-head comparisons with one another. These effects were not clinically relevant. The effect of adjuvant ultrasound therapy was comparable to that of placebo.

#### 1.1.6. Green 2005 Ø

Green S, Buchbinder R, Hetrick S. Acupuncture For Shoulder Pain. Cochrane Database Syst Rev. 2005;(2):Cd005319. [136181].

Purpose	To determine the efcacy and safety of acupuncture in the treatment of adults with shoulder pain.
Methods	Search strategy : The Cochrane Controlled Trials Register, MEDLINE, EMBASE and CINAHL were searched from inception to December 2003, and reference lists from relevant trials were reviewed. Selection criteria : randomised and quasi-randomised trials, in all languages, of acupuncture compared to placebo or another intervention in adults with shoulder pain. Specic exclusions were duration of shoulder pain less than three weeks, rheumatoid arthritis, polymyalgia rheumatica, cervically referred pain and fracture. Data collection and analysis : two reviewers independently extracted trial and outcome data. For continuous outcome measures where the standard deviations were not reported it was either calculated from the raw data or converted from the standard error of the mean. If neither of these was reported, authors were contacted. Where results were reported as median and range, the trial was not included in the meta- analysis, but presented in Additional Tables. Effect sizes were calculated and combined in a pooled analysis if the study end-points population and intervention were homogenous. Results are presented separately for rotator cuff disease, adhesive capsulitis, full thickness rotator cuff tear and mixed diagnoses, and, where possible, combined in meta-analysis to indicate effect of acupuncture across all shoulder disorders.
Results	<b>Nine trials</b> of varying methodological quality met the inclusion criteria. For all trials there was poor description of interventions. Varying placebos were used in the different trials. Two trials assessed short-term success (post intervention) of acupuncture for rotator cuff disease and could be combined in meta analysis. There was no significant difference in short-term improvement associated with acupuncture when compared to placebo, but due to small sample sizes this may be explained by Type II error. Acupuncture was of benefit over placebo in improving the Constant Murley Score (a measure of shoulder function) at four weeks (WMD 17.3 (7.79,26.81)). However, by four months, the difference between the acupuncture and placebo groups, whilst still statistically signicant, was no longer likely to be clinically significant (WMD 3.53 (0.74, 6.32)). The Constant Murley Score is graded out of 100, hence a change of 3.53 is unlikely to be of substantial benet. The results of a small pilot study demonstrated some benefit of both traditional. and ear acupuncture plus mobilization over mobilization alone. There was no difference in adverse events related to acupuncture when compared to placebo, however this was assessed by only one trial.

Conclusion	Due to a small number of clinical and methodologically diverse trials, little can be concluded from this review. There is little evidence to support or refute the use of
	acupuncture for shoulder pain although there may be short-term benefit with respect to pain and function.

#### 1.1.7. Grant 2004 ★

Grant HJ, Arthur A, Pichora DR. Evaluation of interventions for rotator cuff pathology: a systematic review. J Hand Ther. 2004;17(2):274-99.145568

Purpose	A systematic review of published evidence was conducted investigating surgical and conservative management of rotator cuff disease.
Methods	Medical databases searched included Medline, the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Physiotherapy Evidence Database (PEDro), and the Cochrane Collaboration library. Two independent reviewers evaluated each article for inclusion. Established criteria were used to assess the methodologic quality of articles examining outcomes of treatment interventions for rotator cuff disease.
Results	Due to the low methodologic quality of the studies that are currently available in this area, there is insufficient evidence to strongly support or refute the effectiveness of any available treatment intervention for rotator cuff pathology.
Conclusion	<b>The best available evidence</b> supports open and primary surgery over arthroscopic debridement and revision surgery; and in the area of conservative management, electrotherapy, steroid use, exercise therapy, and <b>acupuncture</b> . There is a clear need for more methodologically sound studies to achieve strong evidence on which treatment practices can be based.

### **1.2. Special Acupuncture Techniques**

#### **1.2.1.** Comparison of Acupuncture Techniques

#### 1.2.1.1. Zhang 2020

Zhang Jinhuan. [Different acupuncture therapies for treating periarthritis of the shoulder: overview of systematic reviews and network Meta-analysis]. Chinese Journal of Tissue Engineering Research. 2020. [212919].

Background	Increasing systematic reviews of acupuncture treatment for periarthritis of shoulder indicate that acupuncture treatment has better efficacy than western medicine. However, the methodological quality of these systematic reviews and the differences in efficacy between different acupuncture therapies are unclear.
Objective	To evaluate the methodological quality of systematic reviews regarding acupuncture therapy for periarthritis of shoulder and to compare the efficacy of different acupuncture therapies in treating periarthritis of the shoulder.

Methods	A total of seven electronic databases were searched for systematic reviews regarding different acupuncture therapies for periarthritis of the shoulder, from inception to December 28, 2019. The AMSTAR2 instrument was used to evaluate the methodological quality of included systematic reviews. The eligible randomized controlled trial (RCTs) were selected from the included systematic reviews and updated RCTs from the above systematic reviews to December 28, 2019. Cochrane risk of bias tool was used for the risk of bias of the included RCTs. Pairwise meta-analyses were performed using the random-effects model, and network meta-analysis of the included RCTs were performed the frequentist framework. All data analyses were completed in Stata 14. 0.
Results and conclusion	Thirty-four qualified RCTs (n=3 098) were included from five critically low-quality systematic reviews and updated RCTs. Five interventions were ranked based on the ranking probability in the network meta-analysis. Compared with western medicine, warm acupuncture [odds ratio (OR)=1. 26, 95% confidence interval (Cl) (1. 15, 1. 39)] has the highest possibility to improve the symptoms of periarthritis of the shoulder, followed by thermo-sensitive moxibustion [OR=1. 26, 95%Cl (1. 15, 1. 39)], electroacupuncture [OR=1. 21, 95%Cl (1. 10, 1. 33)], filiform needle [OR=1. 21, 95%Cl (1. 01, 1. 24)]. In terms of visual analogue scale score, compared with western medicine, thermo-sensitive moxibustion [OR=0. 12, 95%Cl (0. 03, 0. 46)] had the highest possibility of reducing visual analogue scale score followed by warm acupuncture [OR=0. 28, 95%Cl (0. 11, 0. 75)] and electroacupuncture [OR=0. 34, 95%Cl (0. 12, 0. 96)]. Considering the pairwise meta-analyses and network meta-analysis of this study, among the four acupuncture therapies included, thermosensitive moxibustion and warm acupuncture can be considered as a complementary alternative to the treatment of periarthritis of the shoulder. However, given the critically low methodological quality of the included systematic reviews and poor reporting risk bias of RCTs, more rigorous design and standardized reporting are needed to further demonstrate the reliability of this study.

#### 1.2.2. Ashi Points / Dry Needling

#### 1.2.2.1. Hall 2018 Ø

Hall ML, Mackie AC, Ribeiro DC. Effects of dry needling trigger point therapy in the shoulder region on patients with upper extremity pain and dysfunction: a systematic review with meta-analysis. Physiotherapy. 2018;104(2):167-177. [189828].

Question	What is the effectiveness and what are the adverse effects.
Methods	DESIGN: Systematic review with meta-analysis. PARTICIPANTS: Patients with shoulder or upper extremity pain or dysfunction. INTERVENTION: Trigger point dry needling (TDN) compared to control, another intervention or another needling technique. OUTCOME MEASURES: Primary outcome measures included shoulder or upper limb pain, shoulder or upper limb dysfunction.
Results	<b>Eleven randomized trials involving 496 participants</b> were appraised. There was very low evidence that trigger point dry needling of the shoulder region is effective for reducing pain and improving function in the short term. There is some evidence that needling both active and latent trigger points is more effective than needling an active trigger point alone for pain immediately and 1-week after treatment (SMD=-0.74, 95%CI=-1.2 to -0.3; and SMD=-1.0, 95%CI=-1.52 to -0.59).

**Conclusion** There is very low evidence to support the use of TDN in the shoulder region for treating patients with upper extremity pain or dysfunction. Two studies reported adverse effects to TDN interventions. Most common adverse effects included bruising, bleeding, and pain during or after treatment. Future studies are likely to change the estimates of the effectiveness of TDN for patients with upper extremity pain or dysfunction.

#### 1.2.2.2. Wang 2016 ★

Wang KF, Zhang LI, Lu F, Lu YH, Yang CH. Can ashi points stimulation have specific effects on shoulder pain? a systematic review of randomized controlled trials. Chin J Integr Med. 2016;22(6):467-72. [182508].

Purpose	To provide an evidence-based overview regarding the efficacy of Ashi points stimulation for the treatment of shoulder pain.
Methods	A comprehensive search [PubMed, Chinese Biomedical Literature Database, China National Knowledge Infrastructure (CNKI), Chongqing Weipu Database for Chinese Technical Periodicals (VIP) and Wanfang Database] was conducted to identify randomized or quasi-randomized controlled trials that evaluated the effectiveness of Ashi points stimulation for shoulder pain compared with conventional treatment. The methodological quality of the included studies was assessed using the Cochrane risk of bias tool. RevMan 5.0 was used for data synthesis.
Results	<b>Nine trials</b> were included. Seven studies assessed the effectiveness of Ashi points stimulation on response rate compared with conventional acupuncture. Their results suggested significant effect in favour of Ashi points stimulation [odds ratio (OR): 5.89, 95% confidence interval (CI): 2.97 to 11.67, P<0.01, heterogeneity: $\chi$ 2=3.81, P=0.70, I2=0% ]. One trial compared Ashi points stimulation with drug therapy. The result showed there was a significantly greater recovery rate in group of Ashi points stimulation (OR: 9.58, 95% CI: 2.69 to 34.12). One trial compared comprehensive treatment on the myofascial trigger points (MTrPs) with no treatment and the result was in favor of MTrPs.
Conclusion	Ashi points stimulation might be superior to conventional acupuncture, drug therapy and no treatment for shoulder pain. However, due to the low methodological quality of included studies, a firm conclusion could not be reached until further studies of high quality are available.

#### 1.2.3. Acupotomy

#### 1.2.3.1. Huang 2015 ★

Huang Peihua, Zheng Jinghui. [Systematic evaluation of therapeutic effect of acupotomy in treating periarthritis of shoulder]. Clinical Journal of anhui Traditional Chinese Medicine. 2015;1:120-123. [186967].

Objective	To use the Mate method to evaluate the value of needle knife treatment of periarthritis of shoulder.
Methods	Searches of electronic databases from CNKI, VIP and WANFANG DATA, a randomized controlled trial of acupuncture knife treatment of periarthritis of shoulder were collected from 2000 January to 2013 December were selected and published, and evaluate the quality of the documents collected by the Cochrane collaboration, provided by Review Manager 5 software for statistical analysis.

Results	<b>3 RCT and 3 CCT were included, including 518 patients,</b> the Mate analysis results showed that the contrast effect of acupotomy and acupuncture massage for treatment of periarthritis of shoulder, the synthesis result advantage than OR [95%CI] 5. 27 [2. 22, 12, 53]. Comparison of therapeutic effects of needle knife therapy and local treatment of
	periarthritis of shoulder closed, comprehensive results advantage than OR [95%CI] 7. 26 [1. 24, 42. 35]. The needle knife treatment of periarthritis total efficiency is higher than that of the control group (acupuncture or local block).
Discussion	It is effective on the treatment of scapulohumeral periarthritis with acupuncture and massage knife, use or use local close cure scapulohumeral periarthritis of comparison, the efficiency is obvious advantages, but because of the volume of literature into less, low quality, the sample size is not large enough, thus need to the further improved.

#### 1.2.4. Warm Needle

#### 1.2.4.1. Zhang 2020

Zhang Haiying. [Meta-analysis of Therapeutic Effect of Needle Warming Moxibustion for Scapulohumeral Periarthritis]. Journal of Guangzhou University of TCM. 2020. [212959].

Objective	To systematically evaluate the therapeutic effect of needle warming moxibustion for scapulohumeral periarthritis by Meta-analysis.
Methods	The randomized controlled trials (RCTs) on needle warming moxibustion in treating scapulohumeral periarthritis were retrieved from Chinese databases such as CKNI, VIP, Wanfang, CBM and English database PubMed. Meta-analysis of the total effective rate, visual analogue scale (VAS)score, shoulder joint function score in the RCTs was performed by Rev Man 5. 3 software.
Results	A total of 23 RCTs literature involving 2 279 patients were included, of which 1 194 cases was in the experimental group and 1 085 cases was in the control group. The Meta-analysis results showed that the clinical total effective rate, VAS score, and shoulder joint function score in the experimental group (needle warming moxibustion treatment for scapulohumeral periarthritis)were superior to those of the control group, and the differences were statistically significant (P<0. 01).
Conclusion	The therapeutical effect of needle warming moxibustion for scapulohumeral periarthritis is superior to that of routine acupuncture and electro-acupuncture. However, due to the less sample size and low quality of literature, this conclusion has to be further verified by high-quality RCTs.

#### 1.2.5. Combined with Joint Mobilization

#### 1.2.5.1. Wang 2020

Wang Shudong. [Meta-analysis of Systematic Evaluation of Acupuncture Combined with Joint Mobilization in the Treatment of Scapulohumeral Periarthritis]. Journal of Liaoning University of TCM. 2020. [212909].

**Objective** To systematically evaluate the effectiveness and safety of acupuncture combined with joint mobilization in treating scapulohumeral periarthritis.

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Methods	According to the requirements of Meta-analysis, Chinese and English databases such as PubMed, CBM, EMbase, The Cochrane Library, CNKI, VIP and WanFang were searched by computer. The computer search period was from March 2019, supplemented by manual search, which lasted from 2016 to 2019. The included literature is a randomized controlled clinical trial of acupuncture combined with joint mobilization as an intervention to treat scapulohumeral periarthritis. According to the inclusion and exclusion criteria, the literature was searched and extracted by two professionals, and Meta-analysis and literature quality evaluation were carried out by RevMan5. 3 software.
Results	A total of 16 clinical randomized controlled trials with 1487 patients were included. Meta-analysis showed that the heterogeneity test of total efficiency of 16 literatures: [Chi~2=10.65, P=0.78, I~2=0, OR=4.34, 95%CI (2.91, 6.47), Z=7.18, P<0.000 01];Heterogeneity test of VAS scores in 8 papers: $[MD=-1.53, 95%CI (-2.37, 0.69), Z=3.56, P<0.000 01];$ Five literatures reported ROM, and the results of five heterogeneity tests were flexion $[MD=16.55, 95%CI (2.14, 30.95), Z=2.25, P<0.000 01]$ and extension $[MD=10.37, 95%CI (4.80, 15.93), Z=3.65, P<0.000 01]$ , abduction $[MD=14.88, 95%CI (7.53, 22.23), Z=3.97, P<0.000 01]$ , internal rotation $[MD=12.10, 95%CI (10.38, 13.83), P<0.000 01]$ , and backward rotation $[MD=12.58, 95%CI (10.84, 14.32), P<0.000 01]$ . No adverse reactions have been reported in the literature.
Conclusio	Acupuncture combined with joint mobilization is effective and safe in treating scapulohumeral periarthritis. Acupuncture combined with modern rehabilitation technologyjoint mobilization will play a guiding role in experimental research and clinical treatment of scapulohumeral periarthritis.

#### 1.2.6. Multimodal Care

#### 1.2.6.1. Goldgrub 2016 ★

Goldgrub R, Côté P, Sutton D, Wong JJ, Yu H, Randhawa K. The Effectiveness of Multimodal Care for the Management of Soft Tissue Injuries of the Shoulder: A Systematic Review by the Ontario Protocol for Traffic Injury Management (OPTIMa) Collaboration. J Manipulative Physiol Ther. 2016;39(2):121-39. [190698].

Objectives	The purpose of this systematic review was to evaluate the effectiveness of multimodal care for the management of soft tissue injuries of the shoulder.
Methods	We conducted a systematic review and searched MEDLINE, EMBASE, CINAHL, PsycINFO, and the Cochrane Central Register of Controlled Trials from 1990 to 2015. Two independent reviewers critically appraised studies using the Scottish Intercollegiate Guidelines Network criteria. We used best evidence synthesis to synthesize evidence from studies with low risk of bias.
Results	We screened 5885 articles, and 19 were eligible for critical appraisal. Ten randomized controlled trials had low risk of bias. For persistent subacromial impingement syndrome, multimodal care leads to similar outcomes as sham therapy, radial extracorporeal shock-wave therapy, or surgery. For subacromial impingement syndrome, multimodal care may be associated with small and nonclinically important improvement in pain and function compared with corticosteroid injections. For rotator cuff tendinitis, dietary-based multimodal care may be more effective than conventional multimodal care (exercise, soft tissue and manual therapy, and placebo tablets). For nonspecific shoulder pain, multimodal care may be more effective than wait list or usual care by a general practitioner, but it leads to similar outcomes as exercise or corticosteroid injections.

Conclusions The current evidence suggests that combining multiple interventions into 1 program of care does not lead to superior outcomes for patients with subacromial impingement syndrome or nonspecific shoulder pain. One randomized controlled trial suggested that dietary-based multimodal care (dietary advice, acupuncture, and enzyme tablets) may provide better outcomes over conventional multimodal care. However, these results need to be replicated.

### **1.3. Special Clinical Forms**

#### 1.3.1. Rotator Cuff Disease

#### 1.3.1.1. Zhang 2024

Zhang HN, Chen JG, Wang XY, Fan S, Bao A, Li HN, Wang JG. Efficacy comparison between acupuncture and other modalities in the treatment of rotator cuff diseases: meta-analysis of randomized controlled trials. Am J Transl Res. 2024 Feb 15;16(2):599-616. https://doi.org/10.62347/ncrj1270

Objective	This study aimed to analyze the efficacy of acupuncture alone or combined with physical therapy compared to other treatment interventions for relieving pain and improving function in rotator cuff diseases.
Methods	Our study followed the Preferred Reporting Items for Systematic Reviews and Meta- Analyses (PRISMA) guidelines. After PROSPERO (CRD42023396740) registration, all randomized controlled trials (RCTs) published from the inception of the databases to October 10, 2023, evaluating the efficacy of acupuncture either alone or in combination with physical therapy for treating rotator cuff diseases, were extracted from seven databases, including PubMed, Embase, the Web of Science, the Cochrane Library, the China National Knowledge Infrastructure (CNKI), the VIP Database for Chinese Technical Periodicals (VIP), and the Wanfang Date. Two independent researchers assessed the quality of the included studies and extracted relevant data. Furthermore, a meta- analysis was conducted using Stata 14 software.
Results	We included 13 RCTs - 12 published in English and 1 in Chinese - that enrolled 1,371 patients. The meta-analysis results demonstrated that acupuncture alone or in combination with physical therapy was superior to other interventions for short-term shoulder joint function improvement (standardized mean difference [SMD] = -0.82, 95% confidence interval [95% CI]: -1.28 to -0.35, P = 0.001), medium-term shoulder joint function improvement (SMD = -1.00, 95% CI: -1.62 to -0.38, P = 0.002), short-term pain relief (weighted mean difference [WMD] = -1.37, 95% CI: -2.39 to -0.38, P = 0.006), medium-term pain relief (WMD = -1.66, 95% CI: -2.70 to -0.63, P = 0.002), and post-treatment shoulder joint abduction improvements (SMD = 0.68, 95% CI: 0.20 to 1.16, P = 0.005), external rotation (SMD = 0.62, 95% CI: 0.13 to 1.11, P = 0.012), and forward flexion (SMD = 0.71, 95% CI: 0.44 to 0.97, P < 0.001), with significant differences (P < 0.05).
Conclusion	Based on the current clinical data, meta-analysis showed that acupuncture alone or combined with physical therapy is efficacious for short- and medium-term (< 3 months) pain relief and functional improvements. However, compared to other interventions, the efficacy of the long-term (3 to 12 months) period did not significantly differ. After treatment, these modalities displayed advantages such as improved shoulder joint abduction, external rotation, and forward flexion movements. However, no significant difference was noted in internal rotation movement. Thus, future studies might further investigate whether different acupuncture methods affect the efficacy of treating rotator cuff diseases and improving long-term outcome.

#### 1.3.1.2. Choi 2021

Seoyoung Choi, Jisun Lee, Seunghoon Lee, Gi Young Yang, Kun Hyung Kim. Acupuncture for Symptomatic Rotator Cuff Disease: A Systematic Review and Meta-Analysis. J Acupunct Res. 2021;38(1):20-31. [219977]. doi

Objective	The objective was to evaluate the effectiveness and safety of acupuncture for patients with rotator cuff diseases.
Mehtods	There were 12 electronic databases and 3 trial registries searched up to November 30th, 2019. All randomized trials were eligible, regardless of language, date of publication, or settings. The primary outcomes were pain, shoulder function, and proportion of improved participants assessed within 12 weeks of randomization of the trial. The Cochrane risk of bias for the studies was assessed. Effects sizes were presented as a risk ratio, mean difference, or standardized mean difference with a 95% confidence intervals. Grading of Recommendations Assessment, Development and Evaluation approach was adopted to rate certainty of evidence.
Results	Of the 3,686 records screened, <b>28 randomized trials (2,216 participants)</b> were included in this review. The types of acupuncture included manual acupuncture, dry needling, electroacupuncture, acupotomy, warm needle acupuncture, and fire needle acupuncture. All of the studies had an unclear or high risk of bias related to more than 1 domain. Significant benefits of acupuncture in terms of pain and shoulder function were observed in all comparisons, however, the proportion of improved participants was not described in 2 comparisons. There was substantial heterogeneity among meta-analyzed trials. No serious harm was observed. For primary outcomes, the overall certainty of evidence was very low.
Conclusions	There was very low certainty of evidence for the benefits of acupuncture for patients with rotator cuff diseases. The safety of acupuncture remains unclear due to the incompleteness of reporting. Future well-designed randomized trials with transparent reporting are required.

#### 1.3.1.3. Choi 2018

Choi HM, Han SY, Hwang DR, et al. Acupuncture treatment for rotator cuff disorder: a systematic review. J Korean Med Rehab. 2018;28:11-20. [167876]. http://www.e-jkmr.org/journal/view.html?doi=10.18325/jkmr.2018.28.4.11

Objectives	To systematically explore the effects of acupuncture treatment for rotator cuff disorders and review the clinical trials.
Methods	We searched 9 electronic databases (PubMed, Cochrane central, Embase, China National Knowledge Infrastructure [CNKI], Korea Institute of Science and Technology Information [KISTI], National Digital Science Library [NDSL], Korean studies Information Service System [KISS], Research Information Sharing Service [RISS], Oriental Medicine Advanced Searching Integrated System [OASIS]) to find randomized controlled trials that used acupunture treatment for rotator cuff disorders. We assessed the designs of the randomized controlled trials and the method of acupuncture treatment according to the Standards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA). The methodological quality of randomized controlled trials were assessed using the Cochrane Risk of Bias (RoB) tool.
Results	Total <b>5 trials</b> were reviewed. 4 out of 5 randomized clinical trials reported meaningful effects of acupuncture treatments compared to control group. However risk of bias seemed high.

**Conclusions** Although the results suggest that acupuncture treatment has favorable effects for rotator cuff disorders, most of the studies included methodologically high risk of bias. Thus, well designed randomized clinical trials which evaluate the effects of acupuncture treatment for rotator cuff disorders should be encouraged.

#### 1.3.2. Subacromial Impingement Syndrome

See corresponding item

#### 1.3.3. Poststroke Shoulder Pain

See corresponding item

# 2. Clinical Practice Guidelines

 $\oplus$  positive recommendation (regardless of the level of evidence reported)  $\emptyset$  negative recommendation (or lack of evidence)

# 2.1. Quebec Rehabilitation Network and the Quebec Pain Research Network (REPAR, QPRN, Canada) 2025 $\oplus$

Desmeules F, Roy JS, Lafrance S, Charron M, Dubé MO, Dupuis F, Beneciuk JM, Grimes J, Kim HM, Lamontagne M, McCreesh K, Shanley E, Vukobrat T, Michener LA. Rotator Cuff Tendinopathy Diagnosis, Nonsurgical Medical Care, and Rehabilitation: A Clinical Practice Guideline. J Orthop Sports Phys Ther. 2025 Apr;55(4):235-274. https://doi.org/10.2519/jospt.2025.13182

Recommendation No. 28. Clinicians may use or recommend acupuncture in addition to an active rehabilitation program to reduce pain and disability in adults with Rotator Cuff Tendinopathy.

# 2.2. Finnish Medical Association, Finnish Physiatrist Association and Finnish Orthopedic Association (Finland) 2022 $\oplus$

[The Tendon Disorders of the Shoulder]. Duodecim of the Finnish Medical Association, the Finnish Physiatrist Association and the Finnish Orthopedic Association. 2022. https://www.kaypahoito.fi/hoi50099

Acupuncture may reduce pain in the short term in shoulder tendon problems.

# 2.3. Institut de Recherches Robert-Sauvé en santé et en sécurité du travail (IRSST, Canada) (lésions professionnelles de la coiffe des rotateurs de l'épaule) 2021 ⊕

Desmeules F et al. Les lésions professionnelles de la coiffe des rotateurs de l'épaule : optimiser la prise en charge et favoriser le retour au travail. Institut de Recherches Robert-Sauvé en santé et en sécurité du travail. 2021:90P. [213585]. doi

Recommandation 46 - Échelle SORT : Grade B. Selon des données probantes de niveau très faible, l'acupuncture peut être utile en combinaison avec un programme d'exercices pour réduire la douleur et augmenter la fonction des adultes qui présentent une tendinopathie de la coiffe des rotateurs. Les évidences disponibles quant aux bénéfices associés à l'acupuncture pour le traitement des lésions de la coiffe des rotateurs demeurent toutefois très limitées.

## 2.4. National Institute for Health and Clinical Excellence (NICE, UK) 2017 ⊕

CKS Clinical knowledge summaries). Shoulder pain. London (UK): National Institute for Health and Clinical Excellence (NICE). 2017:25P. [193257].

*Frozen shoulder*: Consider referral for physiotherapy. Acupuncture may be performed by the physiotherapist. *Glenohumeral joint osteoarthritis*: Not recommanded,

# 2.5. American College of Occupational and Environmental Medicine (ACOEM, USA) 2016 $\oplus$

Shoulder Disorders Guideline. American College of Occupational and Environmental Medicine. 2016. 379P. [181260].

Recommendation: **Acupuncture for Chronic Rotator Cuff Tendinopathies, including Impingement Syndrome, or Post-operative Pain**. Acupuncture is recommended for select use in chronic rotator cuff tendinopathies or postoperative pain only as an adjunct to more efficacious treatments. *Indications* - As a tertiary treatment if INSAIDs, active exercises, injections, and surgery (if indicated) fail to resolve or sufficiently improve pain. *Frequency/Duration* - Frequency and duration pattern in the quality trial was weekly for 8 weeks. An initial trial of 4 appointments would appear reasonable in combination with a conditioning program of aerobic and strengthening exercises. An additional 4 appointments should be tied to improvements in objective measures after the first 4 treatments, for a total of 8 (Guerra de Hoyos 04). If acupuncture is trialed in a patient, objective functional improvement should be demonstrated after 6 visits. *Indications for Discontinuation* -Resolution, intolerance, non-compliance including non-compliance with aerobic and strengthening exercises, no functional gains demonstrated. *Strength of Evidence* - Recommended, Evidence (C).

Recommendation: **Post-operative Acupuncture for Rotator Cuff Tendinopathy Post-operative.** Acupuncture is recommended particularly for post-operative rotator cuff tendinopathy patients with significant pain as an adjunct to an active exercise rehabilitation program (Gilbertson 03) Frequency/Duration - See Acupuncture Medical Treatment Gudeilines for recommended frequency, duration, and discontinuation. *Strength of Evidence* - Recommended, Evidence (C).

Recommendation: **Acupuncture for Treatment of Chronic Pain from Shoulder Instability.** Acupuncture is recommended for treatment of chronic pain from shoulder instability. *Strength of Evidence* - Recommended, Insufficient Evidence (I)

Recommendation: **Acupuncture for Chronic Pain from Superior Labral Anterior Posterior or Other Labral Tears**. Acupuncture is recommended to control chronic pain associated with superior labral anterior posterior {SLAP) or other labral tears. *Indications*- Highly selected patients with chronic pain who have inadequate relief and incapacity after multiple interventiions including NSAIDs, a quality active exercise program with which there has been compliance, and potentially surgical repair. Caution that use may augment reliance on passive modalities instead of active, selfcare treatment strategies. *Strength of Evidence* - Recommended, Insufficient Evidence (I)

Recommendation: Acupuncture for Treatment of Select Patients with **Chronic or Post-operative Osteoarthrosis**. Acupuncture is recommended for select use in patients with chronic or postoperative osteoarthrosis as an adjunct to more efficacious treatments. Indications -As a tertiary treatment if NSAIDs, activity modifications, and exercises result in failure to either resolve the pain or improve it sufficiently. *Frequency/Duration* - Frequency and duration pattern in the quality trial was weekly for 3 weeks. An initial trial of 4 appointments would appear reasonable in combination with NSAI Ds and activity modifications, as well as a conditioning program of aerobic and strengthening exercises for most patients. An additional 4 appointments should be tied to improvements in objective measures after the first 4 treatments, for a total of 8 appointments. (Guerra de Hoyos 04) *Indications for Discontinuation* - Resolution, intolerance, or non-compliance including non-compliance with aerobic and strengthening exercises. *Strength of Evidence* - Recommended, Evidence (C) Recommendation: Acupuncture for Treatment of **Adhesive Capsulitis** in Select Patients. Acupuncture is recommended for treatment of adhesive capsulitis in select patients. *Indications* -Adhesive capsulitis, especially moderate to severely affected patients with pain and loss of motion who do not respond sufficiently to NSAIDs, injection(s), and hydrodilatation; (Quraishi 07; Loew 05) recommended to be accompanied by an active exercise program. (Lathia 09; Sun 01) *Frequency-Regimens* vary widely in quality trials. An initial trial of 4 appointments would appear reasonable combined with a conditioning program of aerobic and strengthening exercises. An additional 4 appointments should be tied to improvements in objective measures after first 4 treatments, for a total of 8 appointments. (Guerra de Hoyos 04) *Indications for Discontinuation* - Recovery, plateau in recovery, noncompliance with exercise program, intolerance. *Strength of Evidence* - Recommended, Evidence (C) .

Recommendation: Acupuncture for **Chronic Trigger Points/Myofascial Pain.** Acupuncture is recommended for select use in chronic moderate to severe chronic trigger points/myofascial pain as an adjunct to more efficacious treatments. *Indications* - Moderate to severe chronic trigger points/myofascial pain. Prior treatments should include NSAIDs, exercise, and a trial of dry needling or injection(s) with bupivacaine. *Frequency/Duration* - A limited course as an adjunct to a conditioning program that has both graded aerobic exercise and strengthen ing and stretching exercises for treatment of trigger points/myofascial pain during which time there are clear objective and functional goals that are to be achieved. *Indications for Discontinuation* - Resolution, intolerance, non-compliance including non-compliance with aerobic and strengthening and stretching exercises. *Strength of Evidence* - Recommended, Evidence (C)

## 2.6. Massachusetts Department of Industrial Accidents (DIA, USA) 2015 ⊕

Shoulder Injury Treatment Guideline. Massachusetts Department of Industrial Accidents (DIA). 2015. 18p. [181263].

Acupuncture Must be ordered by a licensed MD, DC, DO, PA, NP, or PT and performed by an acupuncturist licensed in the state where the acupuncture service is provided. Six (6) visits allowed in first eight (8) weeks of acupuncture treatment. Thereafter, the ordering practitioner may request additional visits if there is documentation of objective improvement in functional activity or when the symptomatic benefit facilitates progression in the patient's treatment program. Maximum visits are not to exceed sixteen (16) visits in twelve (12) weeks. The ordering/treating practitioner cannot be the provider of the acupuncture service.

## 2.7. Dutch Orthopaedic Association (DOA, Netherlands) 2014 Ø

Diercks R, Bron C, Dorrestijn O, Meskers C, Naber R, de Ruiter T, Willems J, Winters J, van der Woude HJ; Dutch Orthopaedic Association. Guideline for diagnosis and treatment of **subacromial pain syndrome**: a multidisciplinary review by the Dutch Orthopaedic Association. Acta Orthop. 2014 Jun;85(3):314-22. 2014;85(3):314-22. [175888].

**subacromial pain syndrome**: Acupuncture treatment appears to be no more effective than placebo and exercise therapy (Green et al. 2005).

# 2.8. Finnish Physical Society and the Finnish Orthopedic Association (Finland) 2014 $\oplus$

[Shoulder pain]. Duodecim, the Finnish Physical Society and the Finnish Orthopedic Association. 2014;:18P. [219466]. URL

Acupuncture may temporarily reduce pain in shoulder tendons [86-94] C.

## 2.9. Philippine Academy of Rehabilitation Medicine (PARM, Philippine) 2014

Clinical Practice Guidelines on the Diagnosis and Management of Shoulder Pain Philippine Academy of Rehabilitation Medicine (PARM). 2014:113P. [191030].

*Modalities for adhesive capsulitis*: PARM recommends the use of short-wave diathermy, ultrasound, or electrical stimulation combined with mobility and stretching exercises to reduce pain and improve shoulder range of motion in patients with adhesive capsulitis. Among the said modalities, hot moist packs, **electroacupuncture**, and interferential electrotherapy have the highest level of evidence, followed by TENS, ultrasound, and short-wave diathermy.

Glenohumeral osteoarthritis: PARM suggests physical therapy (massage, joint mobilization, joint manipulation, exercise, phonophoresis, iontophoresis, ultrasound, laser, **acupuncture, and/or electrical stimulation**) in the initial treatment of patients with osteoarthritis of the glenohumeral joint.

# 2.10. University of New South Wales, Medicine, Rural Clinical School (Australie) 2013 ⊕

Hopman K, Krahe L, Lukersmith S, McColl AR, Vine K. Clinical practice guidelines for the management of rotator cuff syndrome in the workplace. Port Macquarie (Australia): University of New South Wales. 2013; :80P. [166290].

Recommendation 23. Clinicians may consider acupuncture in conjunction with exercise; both modalities should be provided by suitably qualified health care providers. (Grade: C)

# 2.11. American College of Occupational and Environmental Medicine (ACOEM, USA) 2011 $\ensuremath{\oplus}$

American College of Occupational and Environmental Medicine (ACOEM). Shoulder disorder Elk Grove Village (IL): American College of Occupational and Environmental Medicine (ACOEM). 2011; 297P. [166087].

*Rotator Cuff Tendinopathies.* Recommended : Acupuncture for select use in chronic rotator cuff tendinopathies and only as an adjunct to more efficacious treatments (C) *Post-operative Pain.* Recommended : Acupuncture for post-operative pain and only as an adjunct to more efficacious treatments (C)

## 2.12. Accident Compensation Corporation (ACC, New-Zealand) 2011 $\oplus$

Hardaker N, Ayson M. Pragmatic Evidence Based Review. The efficacy of acupuncture in the management of musculoskeletal pain. Accident Compensation Corporation (ACC, New-Zealand). 2011. [182414].

The evidence for the effectiveness of acupuncture is most convincing for the treatment of chronic neck and shoulder pain. In terms of other injuries, the evidence is either inconclusive or insufficient. The state of the evidence on the effectiveness of acupuncture is not dissimilar to other physical therapies such as physiotherapy, chiropractic and osteopathy. General

- There is insufficient evidence to make a recommendation for the use of acupuncture in the management of acute neck, back or shoulder pain

 There is emerging evidence that acupuncture may enhance/facilitate other conventional therapies (including physiotherapy & exercise-based therapies)

- There is a paucity of research for the optimal dosage of acupuncture treatment for treating shoulder, knee, neck and lower back pain

- Studies comparing effective conservative treatments (including simple analgesics, physical therapy, exercise, heat & cold therapy) for (sub) acute and chronic non-specific low back pain (LBP) have been largely inconclusive.

Shoulder

- There is good evidence from one pragmatic trial that acupuncture improves pain and mobility in chronic shoulder pain

- There is limited evidence for the efficacy of acupuncture for frozen shoulder

- There is contradictory evidence for the efficacy of acupuncture for subacromial impingement syndrome

## 2.13. National Health and Medical Research Council (Australie) 2003 Ø

Australian Acute Musculoskeletal Pain Guidelines Group. Evidence-based management of acute musculoskeletal pain. Brisbane: Australian Academic Press Pty Ltd. 2003. 259P. [166495].

Acute Shoulder Pain. There is conflicting evidence of the effectiveness of acupuncture compared to placebo ultrasound for shoulder pain and function.

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